CLAIMS

1. Natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225, wherein the derivative of the *Lactobacillus johnsonii* strain CNCM I-1225, of which is a *Lactobacillus johnsonii* CNCM I-4437, is deficient in D-lactic acid production and exhibits an increased shelf life compared to *Lactobacillus johnsonii* strain CNCM I-1225, wherein the D-lactate dehydrogenase enzyme sequence of the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 comprises an arginine to histidine amino acid change at amino acid position 77.

2. Natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 as claimed in claim 1, wherein the nucleic acid sequence of the D-lactate dehydrogenase gene in the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 comprises a G to A transition at nucleic acid position 270.

~~3. Natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 as claimed in claim 1 or claim 2, wherein the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 is *Lactobacillus johnsonii* CNCM I-4437.~~

~~4.~~3. Natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 as claimed in in any one of claims 1 to ~~3~~2, wherein the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 is present as biologically pure culture.

~~5.~~4. Use of the composition~~Composition comprising the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225~~ as claimed in any one of claims 1 to ~~4~~3, for ~~use in the preparation of a composition for use in a method for treatment of the~~ therapy in treatment of human or animal body ~~by therapy~~.

~~6.~~5. The use of the composition~~Composition comprising the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225~~ as claimed in any one of claims 1 to ~~4~~3, for use in the treatment or prevention of disorders linked to a weakened immune system.

~~7.~~6. The use of the composition~~Composition for use~~ as claimed in claim ~~6~~5, wherein the disorder linked to a weakened immune system is selected from the group consisting of flu, rhinitis, common cold, and combinations thereof.

~~8. Composition comprising the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 as claimed in any one of claims 1 to 4, for use in the treatment or prevention of disorders linked to the cell attachment and cell invasion by enterovirulent bacteria or viruses.~~

~~9.~~7. The use of the composition~~Composition for use~~ as claimed in claim ~~8~~6, wherein the disorder linked to ~~the~~ cell attachment and cell invasion by enterovirulent bacterial or viral species, is selected from the group consisting of lower respiratory tract infections, infections of the gastrointestinal tract, otitis media, and combinations thereof, and wherein preferably the enterovirulent species are selected from the group consisting of *Salmonella; Campylobacter; Listeria*; *Escherichia coli* strains, such as ETEC, EHEC, EPEC, or EIEC strains, for example; *Yersinia; Shigella*; Toxin producing bacteria, such as *Staphylococcus aureus, Clostridium botulinum, or Bacillus cereus*; *Vibrio vulnifucus/parahaemolyticus*; rotavirus; norovirus; verotoxigenic *E. coli; Enterobacter*

sakazakii; toxigenic *C. perfringens* (type A and B); food-borne parasites, such as *Echinococcus, Toxoplasma, or Giardia*; *Helicobacter pylori*; *Clostridium difficile*; *Clostridium tetani*; or combinations thereof.

~~10.~~8. The use of the composition~~Composition for use~~ as claimed in any one of claims ~~5~~4 to ~~9~~7, wherein the composition is selected from the group consisting of food compositions, petfood compositions, drinks, dairy products, nutritional formulas, food additives, nutraceuticals, pharmaceutical compositions, food ingredients and/or cosmetic compositions.

~~11.~~9. The use of the composition~~Composition for use~~ as claimed in any one of claims ~~5~~4 to ~~10~~8, wherein the composition is selected from the group consisting of acidified milk products, such as yoghurts or yoghurt drinks; or milk based powders.

~~12.~~10. The use of the composition~~Composition for use~~ as claimed in any one of claims ~~5~~4 to ~~11~~9, wherein the composition comprises the natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 as claimed in any one of claims 1 to ~~4~~3 in an amount of 10^6-10^{12} cfu per daily dose.

~~13.~~11. The use of the composition~~Composition for use~~ as claimed in any one of claims ~~5~~4 to ~~12~~10 containing about 0,005 mg – 5000 mg natural derivative of the *Lactobacillus johnsonii* strain CNCM I-1225 as claimed in any one of claims 1 to4 per daily dose.